CHAPTER THREE

METHODS AND PROCEDURES
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The purpose of this study was designed to assess the influence of socio-demographic characteristics of the university athletes on the factors associated with their sports participation. Precisely, this study scrutinizes the influence of the socio-demographic characteristics of the athletes on their attitude towards sports and on the influence of external factors associated with sports participation.

RESEARCH SITE

For the conduct of this study, the research site was chosen within Tamil Nadu (India). Tamil Nadu has 14 universities on its educational map. For technical convenience, the State was demarcated into 5 regions, namely, north, south, east, west and central. From each of these geographical regions, one university was chosen totalling five representative universities. The chosen universities were: Annamalai University (northern region), University of Madras (eastern region), Bharathidasan University (central region), Bharathiar University (western region), and Manonmaniam Sundaranar University (southern region).
Though these five universities were selected as the sample units of the Tamil Nadu universities so as to represent five different geographical regions of the State of Tamil Nadu, they prove themselves to be worthy of being included as sample units on the basis of their credibility also. They have participated in a number of sports events in the inter-university tournaments with contingents of strength and have created creditable records in many of these events.

For the selection of the subjects from these five university sites, the investigator first gained access to them in the following ways:

1) by seeking prior permission through a letter to the university authorities to include the university athletes as subjects;

2) by obtaining lists of university players who participated in various sports and games tournaments from the university authorities;

3) by requesting the university authorities to give direction to the directors of physical education of various colleges affiliated to respective universities to which the athletes belong regarding how to administer the test (designed in this study); and
4) by requesting the directors of physical education of various affiliated colleges to administer the test to the university athletes attached to their respective colleges.

Lists obtained from the five selected universities showed a total number of 802 athletes for the year 1997-1998 and they included male as well as female athletes. They were distributed in different sports events. The investigator decided to include all the 802 athletes as the subjects of his study.

CONSTRUCTION OF THE INSTRUMENT

For the collection of data from the research site, questionnaire was used. Keeping the internal (attitude) and external (social factors influencing sports participation) factors as dependent variables and the socio-demographic characteristics of the athletes as the independent variables, the instrument was prepared. It was designed in such a way as to obtain the information regarding the athletes' attitude towards sports participation and their exposure to the sports participation influencing factors, and the influence of socio-demographic characteristics in these aspects. The constructed questionnaire was labelled “University Athletes' Participation in Sports Questionnaire” (UAPSQ).*

* The instrument is given in the Appendix.
The development of the questionnaire passed through the following phases:

1) Pre-pilot study phase,

2) Pilot study phase, and

3) Finalisation phase.

**PRE-PILOT STUDY PHASE**

The pre-pilot study comprised two steps, namely, (i) pooling of statements, and (ii) selection of statements.

**Pooling of Statements:** The pre-pilot study phase was concerned with the preparation of statements intended to assess the
attitudes of the athletes towards sports and to understand the
dimensions thereof and to find out the extent of influence of the social
factors on sports participation. The statements were pooled from the
following sources:

i) an extensive review of literature which includes text
books, journals and popular magazines related to sports
and games,

ii) formal and informal discussion with experts in the field
of physical education, psychology, and sociology.

Based on the information collected from these sources, a large
number of statements relating to the intended aspects of the study were
compiled.

**Selection of Statements:** Statements compiled as per the
methodology described above were then subjected to screening and
editing. Ambiguous, confusing, redundant statements were eliminated
and the simple, clear-cut, and crisp statements were retained and
proceeded for inclusion in the study.

For the inclusion of the statements in the study, the following
aspects were considered.
1) Whether the statements were relevant to the study;

2) Whether the language of the statements was simple, clear and direct;

3) Whether the statements would yield the entire range of data needed for the study; and

4) Whether the statements would give definite opinion of the agreement or disagreement.

PILOT STUDY - JURY OPINION

Though the statements were prepared with adequate care, the investigator wanted to have them verified by the experts. So he sent the statements to the supervisors, experts in physical education, education, and psychology for their comments and suggestions regarding the relevance and clarity of the statements. On the basis of their advice and suggestions, further editing of the statement was carried out. In this process, out of thirty statements originally prepared, only twenty four were earmarked as suitable and fit for measuring the attitude towards sports and the relative strength of the selected eleven social factors in influencing the athletes to participate in sports, which were the major objectives of this study.
FINALISATION PHASE

When the building materials, that is, statements to measure the attitude towards sports and statements to understand the respondents’ evaluation of the relative power of the social factors in influencing sports participation were ready, the questionnaire was constructed. It was designed with three sections.

The first section included the points which covered the socio-demographic characteristics of the prospective respondents, namely, gender, area of normal residence, social category, family income, and educational status of the family which were termed as the independent variables. These variables served to categorize the respondents as follows:

1) Gender : (i) Male  
(ii) Female  

2) Area of normal residence : (i) Rural  
(ii) Urban
3) Social category : (i) Scheduled Caste / Scheduled Tribe (SC / ST)

(ii) Backward Class / Most Backward Class (BC /MBC)

(iii) Other Castes (OC)*

4) Family income : (i) High

(ii) Middle

(iii) Low

5) Educational status of the family : (i) Illiterate

(ii) Pre-Matric

(iii) Post-Matric

In the case of variables of gender, and area of normal residence, the respondents were categorized into male and female, rural and urban, respectively, since, broadly speaking, there can be only these two categories, based on these two variables.

In the case of variable of social category, the respondents were classified into SC/ST, BC/MBC, and OC groups based on the usual criteria adopted by the Government of Tamil Nadu for social

* Here "OC" refers to non-SC/ST and non-BC/MBC persons.
categorization.* As the scheme of social categorization of the Government of Tamil Nadu provides for only such threefold social categorization, the respondents were accordingly categorized into SC/ST, BC/MBC, and OC categories.

In the case of the variable of family income, again the income criteria used by the Government of Tamil Nadu was used for the categorization of respondents into three groups, namely, high income group, middle income group and low income group. The income criteria for this threefold classification are above Rs.4450, Rs.2651 - Rs.4450 and upto Rs.2650 respectively. Based on these three income levels the respondents were classified into high, middle and low income groups.

As for the variable of educational status of the family, broadly speaking there can be only two pertinent groups, namely, the un-educated (illiterate) and the educated. Following this clue, in the first instance, the respondents were divided into the illiterate and educated groups on this basis. Again as, among the educated, broadly speaking, there are two levels, namely, pre-matric (below higher secondary school/ +2 level) and post-matric (above +2) levels. The respondents of the

* The criteria adopted by the Government of Tamil Nadu for social categorization are levels of social and educational backwardness.
educated group were divided into pre-matric and post-matric family groups, resulting in the formation of three familial educational status groups, namely, illiterate, pre-matric, post-matric groups in the ultimate.

For the assessment of income level and educational status of the family, the parent who had a higher level among the pair was taken into consideration. When the father's income level happened to be higher than the mother's level in the case of a respondent, the father's income level was considered in disregard to the mother's level. Likewise, if the educational status of the mother might have been higher than that of the father, consideration was paid to her over the father. Thus for the assessment of the income level, and educational status of the family, only one of the parents was considered whose level was higher than the other on these counts.

The second section comprised statements which sought to measure the attitude towards sports. They covered the six dimensions selected for the purpose, namely, courage, sportsmanship, leadership, co-operation, self-control, and sociability. Touching on these six
dimensions, 24 statements were prepared, of which 12 had positive connotation and 12, negative connotation. The statements numbered 2, 4, 5, 7, 10, 12, 14, 16, 17, 19, 21, and 23 were positive and the statements numbered 1, 3, 6, 8, 9, 11, 13, 15, 18, 20, 22, and 24 were negative.* These 24 statements were divided into five categories as follows:

1. Level of attitude - Statements numbered 1 to 24
2. Courage - Statements numbered 1 to 4
3. Sportsmanship - Statements numbered 5 to 8
4. Leadership - Statements numbered 9 to 12
5. Co-operation - Statements numbered 13 to 16
6. Self-control - Statements numbered 17 to 20
7. Sociability - Statements numbered 21 to 24

The statements were transformed into an attitude scale and Likert-type scale was used for the purpose of measuring the attitude towards sports.

* For statements, vide the instrument given in Appendix.
The third section dealt with the eleven social factors identified as influencing the athletes to participate in sports, namely, sports aptitude, early family social status, parents, peers, college/university - interpersonal aspects, college/university - structural aspects, community - interpersonal aspects, community - structural aspects, primary sports involvement, prestige for the sportspersons in the society, and employment opportunities. The statements were set in a Likert-type scale in such a way that the respondents would have to respond to them and indicate their idea about the relative strength of the factors influencing sports participation.

RELIABILITY AND VALIDITY

RELIABILITY

Any instrument used in data collection must satisfy the criteria of reliability and validity. Hence for reliability, the questionnaire was subjected to test and re-test process. Test and re-test were conducted over the questionnaire at an interval of one month. Subjects for the test and re-test were selected from the Manonmaniam Sundaranar University to which the investigator belonged. A sample of 25 university players - 18 males and 7 females were selected from the university teams that had participated in the inter-university sports tournaments during the
years of 1995-96 and 1996-97. The questionnaire forms were distributed to them in October 1997 and a week later they were collected from them. One month later, in November 1997, the same questionnaire was again distributed to the same group of subjects. With the data obtained in the first test and in the second test, the intraclass (univariate correlation) reliability co-efficient was computed. The following results were obtained in the computation.

RELIABILITY CO-EFFICIENT OF UAPSQ (R)

<table>
<thead>
<tr>
<th>Item</th>
<th>R</th>
</tr>
</thead>
<tbody>
<tr>
<td>I Attitude</td>
<td></td>
</tr>
<tr>
<td>a) Courage</td>
<td>0.93*</td>
</tr>
<tr>
<td>b) Sportmanship</td>
<td>0.98*</td>
</tr>
<tr>
<td>c) Leadership</td>
<td>0.94*</td>
</tr>
<tr>
<td>d) Co-operation</td>
<td>0.96*</td>
</tr>
<tr>
<td>e) Self-control</td>
<td>0.96*</td>
</tr>
<tr>
<td>f) Sociability</td>
<td>0.94*</td>
</tr>
<tr>
<td>II Social Factors</td>
<td>0.96*</td>
</tr>
</tbody>
</table>

The results proved the reliability of the instrument beyond doubt.

* Significant at .01 percent level of confidence.
VALIDITY

An instrument needs to be tested not only for its reliability but also for its content validity. Content validity of an instrument depends upon the fidelity with which it can measure whatever the investigator has in mind, namely, what he intends to measure. When a questionnaire is complex, that is, when it deals with various dimensions of the subject of the study, content validity test becomes essential.

The statements intended to measure the attitude of respondents towards sports and their evaluation of the relative strength of the factors influencing the athletes to participate in sports had already been screened for their validity. They were referred to the jury for their comment before they were included in the questionnaire. Even though the questionnaire was prepared with the statements thus screened and confirmed to be valid, the instrument in its entirety was not subjected to content validity test. So, for the second time, the statements and other items in the questionnaire were subjected to screening and for this purpose, jury opinion from another set of experts was sought. Without any comment,

* As the Annamalai University is a unitary, non-affiliating university, the director of physical education of the university was contacted for the purpose.
the jury opinion came in favour of the questionnaire and content validity of the instrument.

COLLECTION OF DATA

After the reliability and content validity tests were over, the directors of physical education of the colleges to which the selected 802 sample athletes belonged were contacted by mail and their consent was sought to participate in the study*. All of them contacted by the investigator gave their consent within two weeks. Multiple copies of questionnaire in the printed format were sent to them in February 1998. With the questionnaire, the following instructions were issued to the directors of physical education with regard to the administration of the test to the university athletes belonging to their respective colleges.

1) The directors of the physical education were requested to distribute the questionnaire forms to the university athletes of their respective colleges and to collect back the filled-in forms after allowing sufficient time to the subjects.

2) The schedule for the distribution of questionnaire forms was left to the discretion of the directors of physical education which depended on their convenience.
3) The directors of physical education were instructed not to have verbal interaction with the students while distributing or collecting the filled-in forms.

4) They were further instructed not to reveal the nature of the study.

5) They were asked not to furnish any clarification to the students with respect to any question in the questionnaire.

6) They were instructed to check the filled-in forms that all questions were answered by the subjects while collecting the forms.

7) The respondents had been assured that their responses would be kept confidential and would in no way be disclosed to anybody under any circumstances. This assurance was given to ensure that they would give honest responses without any sense of apprehension or reservation. The directors of physical education also were advised to reinforce this assurance on their part.

The directors of physical education had been provided with a return addressed, stamped envelope in which to return the filled-in questionnaire forms. A reminder letter was sent to them after four weeks.
following the initial mailing. When the filled-in questionnaires were not received from certain directors of physical education \((N = 25)\) within the stipulated time of six weeks, reminders were sent to them at two weeks intervals till the receipt of the completed forms. While 22 directors of physical education complied with the request within one week of the despatch of the first reminder, 3 directors sent back the filled-in forms after the despatch of the second reminder. Thus, within nine weeks from the date of transmission of the questionnaire forms, the completed questionnaires were received from all directors of physical education.

**DATA PROCESSING**

At the outset, all the questionnaire forms were verified with a view to finding out whether all the questions in the questionnaire were completed by the respondents. It was found that eight questionnaires were incomplete and they were set aside as invalid. In this process, the final tally of the respondents came to stand at 794.

The data processing work first commenced with the processing of personal data items such as gender, area of normal residence, social category, family income, and educational status of the family. The processing yielded details about the socio-demographic composition of the respondents as depicted in the following tables:
Table 3.1
Distribution of Athletes by Gender

<table>
<thead>
<tr>
<th>Gender</th>
<th>Frequency</th>
<th>Per cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>484</td>
<td>60.96%</td>
</tr>
<tr>
<td>Female</td>
<td>310</td>
<td>39.04%</td>
</tr>
<tr>
<td>Total</td>
<td>794</td>
<td>100</td>
</tr>
</tbody>
</table>

3.1 Distribution of Athletes by Gender

[Pie chart showing 60.96% Male and 39.04% Female]
Table 3.2

Distribution of Athletes by Area of Normal Residence

<table>
<thead>
<tr>
<th>Area of Normal Residence</th>
<th>Frequency</th>
<th>Per cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rural</td>
<td>321</td>
<td>40.43%</td>
</tr>
<tr>
<td>Urban</td>
<td>473</td>
<td>59.57%</td>
</tr>
<tr>
<td>Total</td>
<td>794</td>
<td>100</td>
</tr>
</tbody>
</table>

3.2 Distribution of Athletes by Area of Normal Residence
Table 3.3

Distribution of Athletes by Social Category

<table>
<thead>
<tr>
<th>Social Category</th>
<th>Frequency</th>
<th>Per cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>SC/ST</td>
<td>81</td>
<td>10.20</td>
</tr>
<tr>
<td>BC/MBC</td>
<td>578</td>
<td>72.80</td>
</tr>
<tr>
<td>OC</td>
<td>135</td>
<td>17.00</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>794</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

3.3 Distribution of Athletes by Social Category

- SC/ST: 10.20%
- BC/MBC: 72.80%
- OC: 17%

Categories: SC/ST, BC/MBC, OC
Table 3.4

Distribution of Athletes by Income Group

<table>
<thead>
<tr>
<th>Family Income</th>
<th>Frequency</th>
<th>Per cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Income</td>
<td>210</td>
<td>26.45%</td>
</tr>
<tr>
<td>Middle Income</td>
<td>233</td>
<td>29.35%</td>
</tr>
<tr>
<td>Low Income</td>
<td>351</td>
<td>44.20%</td>
</tr>
<tr>
<td>Total</td>
<td>794</td>
<td>100</td>
</tr>
</tbody>
</table>

![Pie Chart for Income Distribution]

- High Income: 26.45%
- Middle Income: 29.35%
- Low Income: 44.20%
Table 3.5

Distribution of Athletes by Educational Status of the Family

<table>
<thead>
<tr>
<th>Educational Status of the Family</th>
<th>Frequency</th>
<th>Per cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Illiterate</td>
<td>138</td>
<td>17.35</td>
</tr>
<tr>
<td>Pre-Matric</td>
<td>122</td>
<td>15.37</td>
</tr>
<tr>
<td>Post-Matric</td>
<td>534</td>
<td>67.25</td>
</tr>
<tr>
<td>Total</td>
<td>794</td>
<td>100</td>
</tr>
</tbody>
</table>

3.5 Distribution of Athletes by Educational Status of the Family

- Illiterate: 15.37%
- Pre-Matric: 15.37%
- Post-Matric: 67.25%
After the completion of the assessment of the distribution of respondents by their socio-demographic characteristics, the data processing work was proceeded towards the measurement of attitude towards sports. For this measurement, scoring of attitudes was done through 24 statements of the questionnaire (on six dimensions covered in four questions each set in Likert-type scale).

For positive statements, points were given as follows:

- Strongly agree ... 5 points
- Agree ... 4 points
- Undecided ... 3 points
- Disagree ... 2 points
- Strongly disagree ... 1 point

For negative statements, points were given as follows:

- Strongly disagree ... 5 points
- Disagree ... 4 points
- Undecided ... 3 points
- Agree ... 2 points
- Strongly agree ... 1 point
To measure the intensity of the influence of the external factors in sports participation, again the Likert-type scale was used and the factors were scored as follows:

- Strongly agree: 5 points
- Agree: 4 points
- Undecided: 3 points
- Disagree: 2 points
- Strongly disagree: 1 point

Data were thus processed and the scores obtained were fed in a computer software package (SPSS Release 4.0 XBX). Using this package, the data analysis was carried out.

DATA ANALYSIS

The data were analysed by employing comparative approach and statistical procedures. For the comparative purpose, only the status of the group was taken as the point of comparison and the static group comparison was made in method design. For the analysis of data, the following statistical procedures were employed as detailed below.
1) Chi-square ($X^2$) test was used to find out the relationship between the level of attitude of the athletes and their socio-demographic characteristics selected for the study.

2) One-way analysis of variance (ANOVA) was used to find out if there was any significant difference at the level of five socio-demographic characteristics of athletes on each dimension of attitude. When the obtained F ratio was significant, Scheffe's test was used as post hoc test to find out the paired mean difference, when more than two means were involved.

3) (a) Spearman's measure of rank order correlation was employed to find out how the athletes ranked the factors influencing sports participation.

(b) Rank-difference correlation co-efficient was used to calculate the co-efficient of agreement for each of the rankings made by the athletes.

(c) One-way analysis of variance was again used to find out if there was any significant difference among the athletes regarding the exposure to the influence of external factors, at each level of the selected
five socio-demographic characteristics. When the obtained F ratio was significant, Scheffe's test was used as post-hoc test to find out the paired mean difference. Any how the test was used in case more than two means were involved.